REMARKS

This paper is filed in response to the office action mailed on April 8, 2005. Claims 1-22 are pending and at issue.

Claims 1-8, 10-17, and, 20-22 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,082,106 to Butcher ("Butcher") in view of U.S. Patent No. 6,199,574 to Harris ("Harris"). Claims 9 and 18-19 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Butcher in view of Harris and further in view of U. S. Patent No. 6,047,720 to Stein ("Stein"). Applicant respectfully submits that this rejection is improper because no combination of Butcher and Harris establishes a *prima facie* case of obviousness.

Independent Claim 1 and its Dependent Claims are Allowable:

Claim 1 recites a liquid metering system including, among other things, an air separation chamber having an optical liquid level sensor, wherein the optical sensor senses air and/or liquid in front thereof and sends a signal to a controller to control an air release valve and/or a liquid outlet valve. The optical sensor of claim 1 allows the liquid metering system to generate electronic signals that can be sent to the controller, which may use such electronic signals to operate the air release valve and the liquid outlet valve. Thus, the optical sensor allows the liquid metering system to operate the air release valve and the liquid outlet valve without any mechanical means and therefore in a fast and efficient manner.

Butcher discloses an air eliminator valve system having a mechanical float for controlling an air release valve and a liquid outlet valve. Because both the air release valve and the liquid outlet valve of the Butcher system are controlled by mechanical means and because there is no electronic control mechanism attached to the air release valve and the liquid outlet valve of the Butcher system, Butcher does not provide any suggestion or motivation to replace the mechanical float with an optical liquid sensor. As a matter of fact, even if the Butcher system were provided with an optical sensor, it would not be able to use the electronic output signal generated by the optical sensor because the air release valve and the liquid outlet valve of the Butcher system are not equipped for electronic control, in a manner recited in claim 1.

On the other hand Harris discloses a method for allowing vapor to vent during the filling of a fuel tank. While Harris discloses an electronic liquid detector for detecting presence or absence of liquid fuel at a predetermined position in the fuel tank, Harris does not disclose any air separation chamber having an optical liquid level sensor, wherein the optical sensor senses air and/or liquid in front thereof and sends a signal to a controller to control an air release valve and/or a liquid outlet valve, in a manner recited in claim 1. As a matter of fact, the liquid detector disclosed in Harris is located in the fuel tank itself and Harris does not provide for any air separation chamber in a manner recited in claim 1. Therefore, Harris system cannot provide any suggestion or motivation to provide an optical liquid sensor in an air separation chamber, in a manner recited in claim 1 or to modify Butcher to provide such an optical liquid sensor, in a manner recited in claim 1.

Under M.P.E.P. §§ 2142 and 2143, to establish a case of obviousness, three criteria must be met. First, there must be a suggestion or motivation in the references cited or in the general knowledge of the art to modify the references or combine the teachings of the references. Second, there must be a reasonable expectation for success that the proposed modification or combination would work. Third, the proposed combination of references must teach or suggest all of the claim limitations. Applicants respectfully submit that there is no suggestion or motivation to combine Butcher and Harris, and, further, a combination of Butcher and Harris fails to teach or suggest every limitation of the claims.

As discussed above, Butcher and Harris does not provide any suggestion or motivation to combine their respective systems so as to provide a system recited in claim 1. Moreover, because the air release valve and the liquid outlet valve of the Butcher system are not equipped for electronic control, replacing the mechanical float with an electronic sensor would not provide a successful air separation system in a manner recited in claim 1. Hence, the proposed combination fails to establish a *prima facie* case of obviousness. Therefore, claim 1 and its dependent claims are not rendered obvious by Butcher, Harris or any combination thereof.

Claims 11 and 21 and Claims Dependent Therefrom are Allowable:

Claims 11 and 21 recite, among other things, an air separation chamber having an optical liquid level sensor, wherein the optical sensor senses air and/or liquid in

front thereof and sends a signal to a controller to control an air release valve and/or a liquid outlet valve. Given the similarities in the claim language of claims 11 and 21 and claim 1, claims 11 and 21 are allowable over Butcher and Harris for much the same reasons and arguments advanced above. Moreover, claims 12-20 and 22 are also allowable over Butcher and Harris, as being dependent upon the independent claims 11 and 21.

CONCLUSION

In view of the above arguments, it is submitted that the pending application is in condition for allowance and an early action so indicating is respectfully requested.

This response is timely filed, therefore, no extension of time is required. The Commissioner is authorized to charge any fee deficiency required by this paper, or credit any overpayment, to Deposit Account No. 13-2855.

Respectfully submitted,

MARSHALL, GERSTEIN & BORUN LLP
6300 Sears Tower
233 South Wacker Drive
Chicago, Illinois 60606-6357
(312) 474-6300

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Chirag B. Patel
Reg. No. 50,555